

REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks. Claims 14-27 have been cancelled. Claim 1 is amended, and claims 28-30 have been added. The amendment to claim 1 is supported, for example, at page 5, line 28 through page 6, line 13. New claim 28 is supported, for example, at page 19, lines 7-13. New claim 29 is supported, for example, at page 18, lines 5-15. New claim 30 is supported, for example, at page 25, lines 1-13. Claims 1-13 are pending in the application, with claims 1 and 9 being independent. The changes made to the claims by the current amendment are attached hereto in a page entitled, "Version with Markings to Show Changes Made."

Claim rejections - 35 U.S.C. § 102(b)

Claims 1-7 and 9-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,185,913 ("*Ammann*"). Applicants respectfully traverse this rejection.

Independent claim 1 is directed to a method of manufacturing an optical head. A reflecting mirror and an optical bench are placed on an external jig provided with a mirror holding portion for maintaining the reflecting mirror. The reflecting mirror and the optical bench are bonded and fixed. The optical bench is demounted from the external jig.

By this method, the external jig is used during the bonding and fixing step, and then the optical bench is demounted from the external jig. Because the external jig is not an element of the optical head that is manufactured by this method, a number of benefits can be realized. For example, positioning walls and adhesion reference planes are not necessary, and the size and thickness of an optical head can be reduced. Also, an external jig can be made with high dimensional precision and used repeatedly. Thus the required dimensional precision of the

optical bench can be lowered, thereby reducing manufacturing costs. See, for example, page 6, lines 3-13.

Ammann relates to a microfiche recorder that can optically combine, align and superimpose three independent images. Applicants respectfully submit, however, that the frame 4 disclosed in *Ammann* does not correspond to the external jig recited in claim 1. In particular, there is no demounting from the frame 4 in *Ammann* of any optical elements. Instead, the frame 4 is an element of the manufactured microfiche recorder.

For at least the above reasons, Applicants submit that independent claim 1 is allowable over the cited art.

Independent claim 9 is directed to an optical head. In a portion where a reflecting mirror is mounted in an optical bench, no reference plane is formed for specifying a mounting angle of the reflecting mirror through contact with the reflecting mirror. This configuration can be achieved, for example, when an external jig is used in a manufacturing process. See, for example, page 6, lines 3-4.

Ammann does not disclose or suggest the feature where in a portion where the reflecting mirror is mounted in the optical bench, no reference plane is formed for specifying a mounting angle of the reflecting mirror through contact with the reflecting mirror. In contrast, as shown in Figures 2 and 3 of *Ammann*, the mirrors 54, 66, and 68 are positioned so that their non-reflecting surfaces are in contact with their respective base plates. For at least the above reasons, Applicants submit that independent claim 9 is allowable over the cited art.

Claims 2-7 and 10-12 depend from claims 1 and 9, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in

combination with the features of its respective base claim, and is believed allowable in its own right. Individual consideration of the dependent claims is respectfully requested.

Claim rejections - 35 U.S.C. § 103(a)

Claims 8 and 13 stand rejected as being unpatentable over *Ammann* in view of prior art disclosed in pages 2 and 3 of the specification. Applicants respectfully traverse this rejection.

As discussed above, *Ammann* does not disclose or suggest the features recited in independent claims 1 and 9, from which claims 8 and 13 depend. Moreover, the discussion of conventional optical heads at pages 2 and 3 of the specification of the present application also does not disclose or suggest at least those features discussed above with respect to the independent claims. Accordingly, Applicants respectfully submit that claims 8 and 13 are allowable over the cited art.

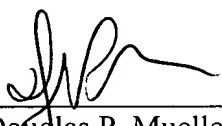
Newly presented claims 28-30 depend from independent claim 1 and are believed allowable for at least the same reasons discussed above. Moreover, each of these dependent claims recites additional features in combination with the features of its respective base claim, and is believed allowable in its own right. Individual consideration of the dependent claims is respectfully requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: December 12, 2002



Douglas P. Mueller
Reg. No. 30,300
DPM:DTL



Serial No. 09/506,347

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

1. (Amended) A method of manufacturing an optical head comprising a light source, an objective lens, a reflecting mirror that reflects beams of light from the light source to allow them to enter the objective lens, and an optical bench for maintaining the light source and the reflecting mirror, the method comprising:

[wherein] placing the reflecting mirror and the optical bench [are bonded and fixed while being placed] on an external jig provided with a mirror holding portion for maintaining the reflecting mirror,

bonding and fixing the reflecting mirror and the optical bench, and
demounting from the external jig the optical bench to which the reflecting mirror has
been bonded and fixed.

RECEIVED

DEC 18 2002

Technology Center 2600

Claims 14-27 have been cancelled.

Claims 28-30 have been added.